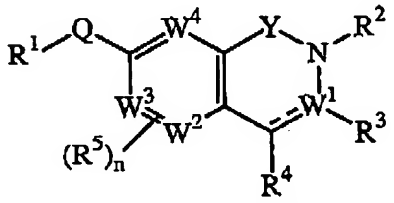
AMENDMENTS TO THE CLAIMS

The following listing of claims will replace all prior versions, and listings, of claims in the application.

Listing of claims:

1 (currently amended). A compound of Formula I



I

or a pharmaceutically acceptable salt thereof,

wherein:

R^1 is independently selected from:

C_5 or C_6 cycloalkyl-(C_1-C_8 alkylenyl);

Substituted C_5 or C_6 cycloalkyl-(C_1-C_8 alkylenyl);

C_8-C_{10} bicycloalkyl-(C_1-C_8 alkylenyl);

Substituted C_8-C_{10} bicycloalkyl-(C_1-C_8 alkylenyl);

5- or 6-membered heterocycloalkyl-(C_1-C_8 alkylenyl);

Substituted 5- or 6-membered heterocycloalkyl-(C_1-C_8 alkylenyl);

8- to 10-membered heterobicycloalkyl-(C_1-C_8 alkylenyl);

Substituted 8- to 10-membered heterobicycloalkyl-(C_1-C_8 alkylenyl);

Phenyl-(C_1-C_8 alkylenyl);

Substituted phenyl-(C_1-C_8 alkylenyl);

Naphthyl-(C_1-C_8 alkylenyl);

Substituted naphthyl-(C_1-C_8 alkylenyl);

5- or 6-membered heteroaryl-(C_1-C_8 alkylenyl);

Substituted 5- or 6-membered heteroaryl-(C_1-C_8 alkylenyl);

8- to 10-membered heterobiaryl-(C_1-C_8 alkylenyl);

Substituted 8- to 10-membered heterobiaryl-(C_1-C_8 alkylenyl);

Phenyl;

Substituted phenyl;

Naphthyl;

Substituted naphthyl;

5- or 6-membered heteroaryl;

Substituted 5- or 6-membered heteroaryl;

8- to 10-membered heterobiaryl; and

Substituted 8- to 10-membered heterobiaryl;

R^2 is independently selected from:

H;

C_1-C_6 alkyl;

Phenyl-(C_1-C_8 alkylenyl);

Substituted phenyl-(C_1-C_8 alkylenyl);

Naphthyl-(C_1-C_8 alkylenyl);

Substituted naphthyl-(C_1-C_8 alkylenyl);

5- or 6-membered heteroaryl-(C_1-C_8 alkylenyl);

Substituted 5- or 6-membered heteroaryl-(C_1-C_8 alkylenyl);

8- to 10-membered heterobiaryl-(C_1-C_8 alkylenyl);

Substituted 8- to 10-membered heterobiaryl-(C_1-C_8 alkylenyl);

Phenyl-O-(C_1-C_8 alkylenyl);

Substituted phenyl-O-(C_1-C_8 alkylenyl);

Phenyl-S-(C_1-C_8 alkylenyl);

Substituted phenyl-S-(C_1-C_8 alkylenyl);

Phenyl-S(O)-(C_1-C_8 alkylenyl);

Substituted phenyl-S(O)-(C_1-C_8 alkylenyl);

Phenyl-$S(O)_2$-(C_1-C_8 alkylenyl); and

Substituted phenyl-$S(O)_2$-(C_1-C_8 alkylenyl);

Each substituted R^1 and R^2 group contains from 1 to 4 substituents, each independently on a carbon or nitrogen atom, independently selected from:

C_1-C_6 alkyl;

CN;

CF_3;

HO;

(C_1-C_6 alkyl)-O;

(C_1-C_6 alkyl)-$S(O)_2$;

H_2N;

(C_1-C_6 alkyl)-N(H);

(C_1-C_6 alkyl)$_2$-N;

(C_1-C_6 alkyl)-C(O)O-(C_1-C_8 alkylenyl)$_m$;

(C_1-C_6 alkyl)-C(O)O-(1- to 8-membered heteroalkylenyl)$_m$;

(C_1-C_6 alkyl)-C(O)N(H)-(C_1-C_8 alkylenyl)$_m$;

(C_1-C_6 alkyl)-C(O)N(H)-(1- to 8-membered heteroalkylenyl)$_m$;

$H_2NS(O)_2$-(C_1-C_8 alkylenyl);

(C_1-C_6 alkyl)-N(H)$S(O)_2$-(C_1-C_8 alkylenyl)$_m$;

(C_1-C_6 alkyl)$_2$-$NS(O)_2$-(C_1-C_8 alkylenyl)$_m$;

3- to 6-membered heterocycloalkyl-(G)$_m$;

Substituted 3- to 6-membered heterocycloalkyl-(G)$_m$;

5- or 6-membered heteroaryl-(G)$_m$;

Substituted 5- or 6-membered heteroaryl-(G)$_m$;

(C_1-C_6 alkyl)-$S(O)_2$-N(H)-C(O)-(C_1-C_8 alkylenyl)$_m$; and

(C_1-C_6 alkyl)-C(O)-N(H)-$S(O)_2$-(C_1-C_8 alkylenyl)$_m$;

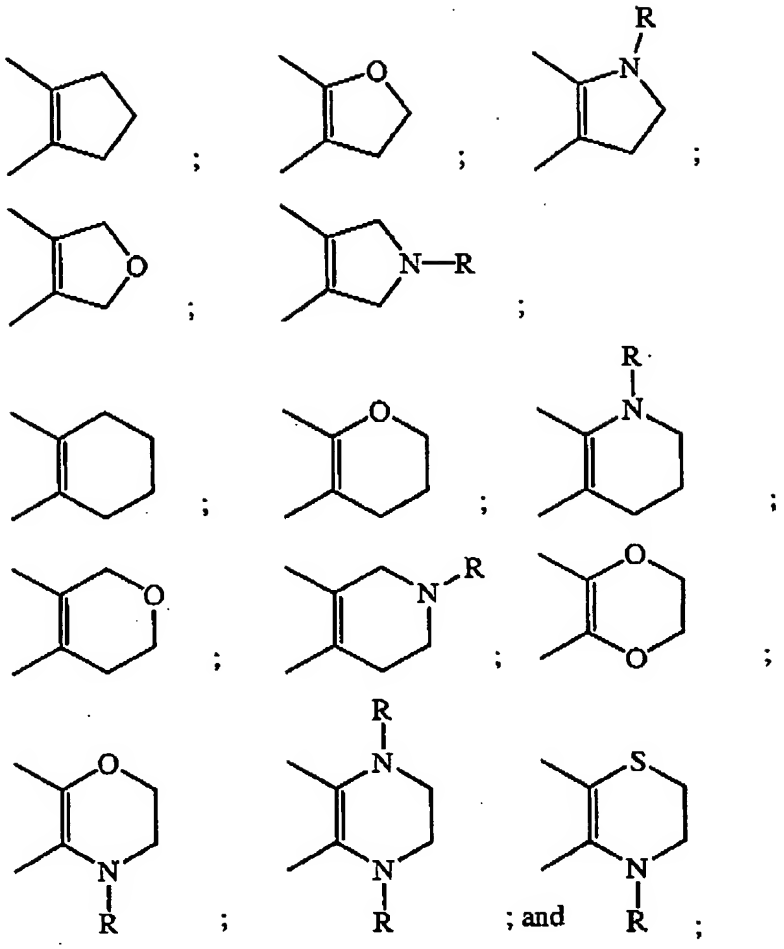
wherein each substituent on a carbon atom may further be independently selected from:

Halo; and

HO_2C;

wherein 2 substituents may be taken together with a carbon atom to which they are both bonded to form the group C=O;

wherein two adjacent, substantially sp^2 carbon atoms may be taken together with a diradical substituent to form a cyclic diradical selected from:



R is H or C_1-C_6 alkyl;

G is CH_2; O, S, S(O); or $S(O)_2$;

Each m is an integer of 0 or 1;

R^3 and R^4 are independently selected from the groups:

H;

C_1-C_6 alkyl;

Substituted C_1-C_6 alkyl;

C_2-C_6 alkenyl;

Substituted C_2-C_6 alkenyl;

C_2-C_6 alkynyl;

Substituted C_2-C_6 alkynyl;

C_3-C_6 cycloalkyl;

Substituted C_3-C_6 cycloalkyl;

C_3-C_6 cycloalkyl-(C_1-C_8 alkylenyl);

Substituted C_3-C_6 cycloalkyl-(C_1-C_8 alkylenyl);

Phenyl;

Substituted phenyl;

Phenyl-(C_1-C_8 alkylenyl);

Substituted phenyl-(C_1-C_8 alkylenyl);

Naphthyl;

Substituted Naphthyl;

Naphthyl-(C_1-C_8 alkylenyl);

Substituted naphthyl-(C_1-C_8 alkylenyl);

3- to 6-membered heterocycloalkyl;

Substituted 3- to 6-membered heterocycloalkyl;

3- to 6-membered heterocycloalkyl-(C_1-C_8 alkylenyl);

Substituted 3- to 6-membered heterocycloalkyl-(C_1-C_8 alkylenyl)

HO;

(C_1-C_6 alkyl)-O;

H_2N;

(C_1-C_6 alkyl)-N(H);

(C_1-C_6 alkyl)$_2$-N;

Each substituted R^3 and R^4 group contains from 1 to 4 substituents, each independently on a carbon or nitrogen atom, independently selected from:

H_2N;

C_1-C_6 alkyl;

CN;

CF_3;

(C_1-C_6 alkyl)-OC(O);

HO;

(C_1-C_6 alkyl)-O;

HS; and

(C_1-C_6 alkyl)-S;

wherein each substituent on a carbon atom may further be independently selected from:

Halo; and

HO_2C;

wherein 2 substituents may be taken together with a carbon atom to which they are both bonded to form the group C=O;

R^5 is H, C_1-C_6 alkyl, H_2N, HO, or halo;

n is an integer of from 0 to 3;

Q is selected from:

~~$OC(O)$;~~

~~$CH(R^6)C(O)$;~~

~~$OC(NR^6)$;~~

~~$CH(R^6)C(NR^6)$;~~

$N(R^6)C(O)$;

~~$N(R^6)C(S)$;~~

~~$N(R^6)C(NR^6)$;~~

~~$N(R^6)CH_2$;~~

~~$SC(O)$;~~

~~$CH(R^6)C(S)$;~~

~~$SC(NR^6)$;~~

~~trans-(H)C=C(H)~~;

~~cis-(H)C=C(H)~~;

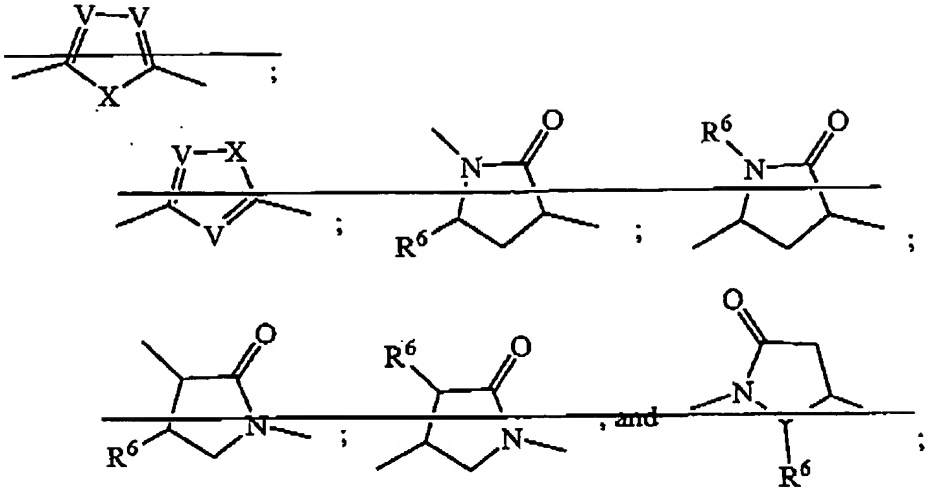
C≡C;

$CH_2C{\equiv}C$;

$C{\equiv}CCH_2$;

$CF_2C{\equiv}C$; and

$C{\equiv}CCF_2$;



R^6 is H, C_1-C_6 alkyl, C_3-C_6 cycloalkyl; 3- to 6-membered heterocycloalkyl; phenyl; benzyl; or 5- or 6-membered heteroaryl;

X is O, S, N(H), or N(C_1-C_6 alkyl);

Each V is independently C(H) or N;

Y is C(=O), CH_2; or C(H)(R^7), ~~$C(R^7)_2$; O; S; S(O); or $S(O)_2$~~;

Each R^7 is independently C_1-C_6 alkyl, H_2N; HO; or halo;

---- means a bond which is optionally present or absent;

W^1 is independently ~~N-R^5 or~~ C(H)R^5 when ---- is absent, wherein R^5 is as defined above;

W^1 is independently ~~N or~~ C-R^5 when ---- is a bond, wherein R^5 is as defined above;

Each W^2, W^3, and W^4 is independently N or C-R^5, wherein R^5 is as defined above;

wherein ~~at least~~ 1 of ~~W^1~~, W^2, W^3, and W^4 is N and the other two of W^2, W^3, and W^4 is C-R^5;

wherein each C_8-C_{10} bicycloalkyl is a bicyclic carbocyclic ring that contains 8-, 9-, or 10-member carbon atoms which are 5,5-fused, 6,5-fused, or 6,6-fused bicyclic rings, respectively, and wherein the ring is saturated or optionally contains one carbon-carbon double bond;

wherein each 8- to 10-membered heterobicycloalkyl is a bicyclic ring that contains carbon atoms and from 1 to 4 heteroatoms independently selected

from 2 O, 1 S, 1 S(O), 1 $S(O)_2$, 1 N, 4 N(H), and 4 N(C_1-C_6 alkyl), and wherein when two O atoms or one O atom and one S atom are present, the two O atoms or one O atom and one S atom are not bonded to each other, and wherein the ring is saturated or optionally contains one carbon-carbon or carbon-nitrogen double bond, and wherein the heterobicycloalkyl is a 5,5-fused, 6,5-fused, or 6,6-fused bicyclic ring, respectively,

wherein each heterocycloalkyl is a ring that contains carbon atoms and from 1 to 4 heteroatoms independently selected from 2 O, 1 S, 1 S(O), 1 $S(O)_2$, 1 N, 4 N(H), and 4 N(C_1-C_6 alkyl), and wherein when two O atoms or one O atom and one S atom are present, the two O atoms or one O atom and one S atom are not bonded to each other, and wherein the ring is saturated or optionally contains one carbon-carbon or carbon-nitrogen double bond;

wherein each 5-membered heteroaryl contains carbon atoms and from 1 to 4 heteroatoms independently selected from 1 O, 1 S, 1 N(H), 1 N(C_1-C_6 alkyl), and 4 N, and each 6-membered heteroaryl contains carbon atoms and 1 or 2 heteroatoms independently selected from N, N(H), and N(C_1-C_6 alkyl), and 5- and 6-membered heteroaryl are monocyclic rings;

wherein each heterobiaryl contains carbon atoms and from 1 to 4 heteroatoms independently selected from 1 O, 1 S, 1 N(H), 1 N(C_1-C_6 alkyl), and 4 N, and where the 8-, 9-, and 10-membered heterobiaryl are 5,5-fused, 6,5-fused, and 6,6-fused bicyclic rings, respectively, and wherein at least 1 of the 2 fused rings of a bicyclic ring is aromatic, and wherein when the O and S atoms both are present, the O and S atoms are not bonded to each other;

wherein with any (C_1-C_6 alkyl)$_2$-N group, the C_1-C_6 alkyl groups may be optionally taken together with the nitrogen atom to which they are attached to form a 5- or 6-membered heterocycloalkyl;

wherein each group and each substituent recited above is independently selected; and

wherein the compound named 4-[1-oxo-7-(3-[1,2,3]triazol-1-ylprop-1-ynyl)-1H-isoquinolin-2-ylmethyl]benzoic acid is excluded.

2 (original). The compound according to Claim 1, or a pharmaceutically acceptable salt thereof, wherein Y is C(=O) or CH_2.

3 (canceled).

4 (original). The compound according to Claim 1, or a pharmaceutically acceptable salt thereof, wherein Q is $N(R^6)C(O)$.

5 (original). The compound according to Claim 1, or a pharmaceutically acceptable salt thereof, wherein Q is $C\equiv C$, $CH_2C\equiv C$, $C\equiv CCH_2$, $CF_2C\equiv C$, or $C\equiv CCF_2$.

6 (original). The compound according to Claim 1, wherein W^3 or W^4 is N and Q is N(H)C(O).

7 (currently amended). The compound according to any one of ~~Claims 1 to 6~~ Claims 1, 2, or 4 to 6 inclusive, wherein R^1 and R^2 are independently selected from:

5- or 6-membered heteroaryl-(C_1-C_8 alkylenyl);

Substituted 5- or 6-membered heteroaryl-(C_1-C_8 alkylenyl);

8- to 10-membered heterobiaryl-(C_1-C_8 alkylenyl);

Substituted 8- to 10-membered heterobiaryl-(C_1-C_8 alkylenyl);

Phenyl-(C_1-C_8 alkylenyl); and

Substituted phenyl-(C_1-C_8 alkylenyl).

8 (currently amended). The compound according to Claim 1, selected from:

4-[1-Oxo-7-(3-phenyl-prop-1-ynyl)-1H-3-azaisoquinolin-2-ylmethyl]benzoic acid tert-butyl ester;

4-[1-Oxo-7-(3-phenyl-prop-1-ynyl)-1H-3-azaisoquinolin-2-ylmethyl]benzoic acid;

2-(3,5-Difluoro-4-hydroxybenzyl)-7-[3-(4H-[1,2,3]triazol-4-yl)prop-1-ynyl]-2H-3-azaisoquinolin-1-one;

7-(3-Phenyl-prop-1-ynyl)-2-(4-trifluoromethylbenzyl)-2H-5-azaisoquinolin-1-one;

2-(3-Fluorobenzyl)-7-(3-phenyl-prop-1-ynyl)-2H-5-azaisoquinolin-1-one;

4-[7-(3-Imidazol-1-ylprop-1-ynyl)-1-oxo-1H-5-azaisoquinolin-2-ylmethyl]benzoic acid tert-butyl ester;

4-[7-(3-Imidazol-1-ylprop-1-ynyl)-1-oxo-1H-5-azaisoquinolin-2-ylmethyl]benzoic acid;

3-[1-Oxo-7-(3-phenyl-prop-1-ynyl)-1H-6-azaisoquinolin-2-ylmethyl]benzonitrile;

4-[1-Oxo-7-(3-phenyl-prop-1-ynyl)-1H-6-azaisoquinolin-2-ylmethyl]benzenesulfonamide;

4-[1-Oxo-7-(3-[1,2,3]triazol-1-ylprop-1-ynyl)-1H-6-azaisoquinolin-2-ylmethyl]benzoic acid tert-butyl ester;

4-[1-Oxo-7-(3-[1,2,3]triazol-1-ylprop-1-ynyl)-1H-6-azaisoquinolin-2-ylmethyl]benzoic acid;

4-[1-Oxo-7-(3-phenyl-prop-1-ynyl)-1H-8-azaisoquinolin-2-ylmethyl]benzoic acid methyl ester; and

3-[1-Oxo-7-(3-phenyl-prop-1-ynyl)-1H-8-azaisoquinolin-2-ylmethyl]benzoic acid methyl ester;

~~2-(4-Fluorobenzyl)-7-3-phenylprop-1-ynyl-2H-3,5-diazaisoquinolin-1-one;~~

~~7-(3-Phenylprop-1-ynyl)-2-(3-trifluoromethylbenzyl)-2H-3,6-diazaisoquinolin-1-one;~~

~~2-(3-Chlorobenzyl)-7-(3-phenylprop-1-ynyl)-2H-3,8-diazaisoquinolin-1-one;~~

~~2-(3,4-Difluorobenzyl)-7-(3-phenylprop-1-ynyl)-2H-5,8-diazaisoquinolin-1-one;~~ ~~and~~

~~4-[1-Oxo-7-(3-[1,2,4]triazol-1-ylprop-1-ynyl)-1H-3,5,8-triazaisoquinolin-2-ylmethyl]benzoic acid tert-butyl ester;~~ or

a pharmaceutically acceptable salt thereof.

9 (original). A pharmaceutical composition, comprising a compound according to Claim 1, or a pharmaceutically acceptable salt thereof, admixed with a pharmaceutically acceptable carrier, excipient, or diluent.

10 (currently amended). The pharmaceutical composition according to Claim 9, comprising a compound ~~according to Claim 8~~ selected from:

4-[1-Oxo-7-(3-phenyl-prop-1-ynyl)-1H-3-azaisoquinolin-2-ylmethyl]benzoic acid tert-butyl ester;

4-[1-Oxo-7-(3-phenyl-prop-1-ynyl)-1H-3-azaisoquinolin-2-ylmethyl]benzoic acid;

2-(3,5-Difluoro-4-hydroxybenzyl)-7-[3-(4H-[1,2,3]triazol-4-yl)prop-1-ynyl]-2H-3-azaisoquinolin-1-one;

7-(3-Phenyl-prop-1-ynyl)-2-(4-trifluoromethylbenzyl)-2H-5-azaisoquinolin-1-one;

2-(3-Fluorobenzyl)-7-(3-phenyl-prop-1-ynyl)-2H-5-azaisoquinolin-1-one;

4-[7-(3-Imidazol-1-ylprop-1-ynyl)-1-oxo-1H-5-azaisoquinolin-2-ylmethyl]benzoic acid tert-butyl ester;

4-[7-(3-Imidazol-1-ylprop-1-ynyl)-1-oxo-1H-5-azaisoquinolin-2-ylmethyl]benzoic acid;

3-[1-Oxo-7-(3-phenyl-prop-1-ynyl)-1H-6-azaisoquinolin-2-ylmethyl]benzonitrile;

4-[1-Oxo-7-(3-phenyl-prop-1-ynyl)-1H-6-azaisoquinolin-2-ylmethyl]benzenesulfonamide;

4-[1-Oxo-7-(3-[1,2,3]triazol-1-ylprop-1-ynyl)-1H-6-azaisoquinolin-2-ylmethyl]benzoic acid tert-butyl ester;

4-[1-Oxo-7-(3-[1,2,3]triazol-1-ylprop-1-ynyl)-1H-6-azaisoquinolin-2-ylmethyl]benzoic acid;

4-[1-Oxo-7-(3-phenyl-prop-1-ynyl)-1H-8-azaisoquinolin-2-ylmethyl]benzoic acid methyl ester; and

3-[1-Oxo-7-(3-phenyl-prop-1-ynyl)-1H-8-azaisoquinolin-2-ylmethyl]benzoic acid methyl ester;

or a pharmaceutically acceptable salt thereof, admixed with a pharmaceutically acceptable carrier, excipient, or diluent.

11 (original). A method for treating osteoarthritis or rheumatoid arthritis, comprising administering to a patient suffering from osteoarthritis a nontoxic effective amount of a compound according to Claim 1, or a pharmaceutically acceptable salt thereof.

12 (currently amended). The method according to Claim 11, wherein the compound administered is a compound ~~according to Claim 8~~ selected from:

4-[1-Oxo-7-(3-phenyl-prop-1-ynyl)-1H-3-azaisoquinolin-2-ylmethyl]benzoic acid tert-butyl ester;

4-[1-Oxo-7-(3-phenyl-prop-1-ynyl)-1H-3-azaisoquinolin-2-ylmethyl]benzoic acid;

2-(3,5-Difluoro-4-hydroxybenzyl)-7-[3-(4H-[1,2,3]triazol-4-yl)prop-1-ynyl]-2H-3-azaisoquinolin-1-one;

7-(3-Phenyl-prop-1-ynyl)-2-(4-trifluoromethylbenzyl)-2H-5-azaisoquinolin-1-one;

2-(3-Fluorobenzyl)-7-(3-phenyl-prop-1-ynyl)-2H-5-azaisoquinolin-1-one;

4-[7-(3-Imidazol-1-ylprop-1-ynyl)-1-oxo-1H-5-azaisoquinolin-2-ylmethyl]benzoic acid tert-butyl ester;

4-[7-(3-Imidazol-1-ylprop-1-ynyl)-1-oxo-1H-5-azaisoquinolin-2-ylmethyl]benzoic acid;

3-[1-Oxo-7-(3-phenyl-prop-1-ynyl)-1H-6-azaisoquinolin-2-ylmethyl]benzonitrile;

4-[1-Oxo-7-(3-phenyl-prop-1-ynyl)-1H-6-azaisoquinolin-2-ylmethyl]benzenesulfonamide;

4-[1-Oxo-7-(3-[1,2,3]triazol-1-ylprop-1-ynyl)-1H-6-azaisoquinolin-2-ylmethyl]benzoic acid tert-butyl ester;

4-[1-Oxo-7-(3-[1,2,3]triazol-1-ylprop-1-ynyl)-1H-6-azaisoquinolin-2-ylmethyl]benzoic acid;

4-[1-Oxo-7-(3-phenyl-prop-1-ynyl)-1H-8-azaisoquinolin-2-ylmethyl]benzoic acid methyl ester; and

3-[1-Oxo-7-(3-phenyl-prop-1-ynyl)-1H-8-azaisoquinolin-2-ylmethyl]benzoic acid methyl ester, or

a pharmaceutically acceptable salt thereof.